

# MATERIAL SAFETY DATA SHEET

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## SECTION 1 CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

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**MATHESON TRI-GAS, INC.**  
**959 ROUTE 46 EAST**  
**PARSIPPANY, NEW JERSEY 07054-0624**

**EMERGENCY CONTACT:**  
**CHEMTREC 1-800-424-9300**  
**INFORMATION CONTACT:**  
**973-257-1100**

**SUBSTANCE: ACETYLENE**

**TRADE NAMES/SYNONYMS:**

MTG MSDS 1; ETHYNE; WELDING GAS; ACETYLEN; ETHINE; NARCYLEN; VINYLENE;  
STCC 4905701; UN 1001; C2H2; MAT00280; RTECS AO9600000

**CHEMICAL FAMILY:** hydrocarbons, aliphatic

**CREATION DATE:** Jan 24 1989

**REVISION DATE:** Sep 16 2002

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## SECTION 2 COMPOSITION, INFORMATION ON INGREDIENTS

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**COMPONENT: ACETYLENE**

**CAS NUMBER:** 74-86-2

**PERCENTAGE:** 100.0

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## SECTION 3 HAZARDS IDENTIFICATION

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**NFPA RATINGS (SCALE 0-4):** HEALTH=1 FIRE=4 REACTIVITY=3

**EMERGENCY OVERVIEW:**

**COLOR:** colorless

**PHYSICAL FORM:** gas

**ODOR:** sweet odor

**MAJOR HEALTH HAZARDS:** central nervous system depression, difficulty breathing

**PHYSICAL HAZARDS:** May explode when heated. Flammable gas. May cause flash fire.

**POTENTIAL HEALTH EFFECTS:**

**INHALATION:**

**SHORT TERM EXPOSURE:** nausea, vomiting, chest pain, wheezing, headache, symptoms of drunkenness, bluish skin color, suffocation, lung congestion, coma

**LONG TERM EXPOSURE:** no information on significant adverse effects

**SKIN CONTACT:**

**SHORT TERM EXPOSURE:** rash

**LONG TERM EXPOSURE:** no information is available

**EYE CONTACT:**



**SHORT TERM EXPOSURE:** no information on significant adverse effects

**LONG TERM EXPOSURE:** no information is available

**INGESTION:**

**SHORT TERM EXPOSURE:** no information on significant adverse effects

**LONG TERM EXPOSURE:** no information is available

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## SECTION 4 FIRST AID MEASURES

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**INHALATION:** If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. If breathing is difficult, oxygen should be administered by qualified personnel. Get immediate medical attention.

**SKIN CONTACT:** Wash exposed skin with soap and water.

**EYE CONTACT:** Flush eyes with plenty of water.

**INGESTION:** If a large amount is swallowed, get medical attention.

**NOTE TO PHYSICIAN:** For inhalation, consider oxygen.

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## SECTION 5 FIRE FIGHTING MEASURES

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**FIRE AND EXPLOSION HAZARDS:** Severe explosion hazard. Vapor/air mixtures are explosive. Electrostatic discharges may be generated by flow or agitation resulting in ignition or explosion.

**EXTINGUISHING MEDIA:** carbon dioxide, regular dry chemical

Large fires: Use regular foam or flood with fine water spray.

**FIRE FIGHTING:** Move container from fire area if it can be done without risk. For fires in cargo or storage area: Cool containers with water from unmanned hose holder or monitor nozzles until well after fire is out. If this is impossible then take the following precautions: Keep unnecessary people away, isolate hazard area and deny entry. Let the fire burn. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tanks due to fire. For tank, rail car or tank truck: Stop leak if possible without personal risk. Let burn unless leak can be stopped immediately. For smaller tanks or cylinders, extinguish and isolate from other flammables. Evacuation radius: 800 meters (1/2 mile). Stop flow of gas.

**LOWER FLAMMABLE LIMIT:** 2.5%

**UPPER FLAMMABLE LIMIT:** 100%

**AUTOIGNITION:** 581 F (305 C)

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## SECTION 6 ACCIDENTAL RELEASE MEASURES

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**OCCUPATIONAL RELEASE:**

Avoid heat, flames, sparks and other sources of ignition. Stop leak if possible without personal risk. Reduce vapors with water spray. Keep unnecessary people away, isolate hazard area and deny entry. Remove sources of ignition. Ventilate closed spaces before entering.

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## SECTION 7 HANDLING AND STORAGE

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**STORAGE:** Store and handle in accordance with all current regulations and standards. Subject to storage regulations: U.S. OSHA 29 CFR 1910.102. Protect from physical damage. Store outside or in a detached building. Keep separated from incompatible substances. Store in a cool, dry place. Store in a well-ventilated area. Avoid heat, flames, sparks and other sources of ignition. Grounding and bonding required. Secure to prevent tipping. Grounding and bonding required. Keep separated from incompatible substances.

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## SECTION 8 EXPOSURE CONTROLS, PERSONAL PROTECTION

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### **EXPOSURE LIMITS:**

#### **ACETYLENE:**

ACGIH (simple asphyxiant)

2500 ppm (2662 mg/m<sup>3</sup>) NIOSH recommended ceiling

**VENTILATION:** Provide local exhaust ventilation system. Ventilation equipment should be explosion-resistant if explosive concentrations of material are present. Ensure compliance with applicable exposure limits.

**EYE PROTECTION:** Eye protection not required, but recommended.

**CLOTHING:** Wear appropriate chemical resistant clothing.

**GLOVES:** Protective gloves are not required, but recommended.

**RESPIRATOR:** Under conditions of frequent use or heavy exposure, respiratory protection may be needed. Respiratory protection is ranked in order from minimum to maximum. Consider warning properties before use.

Any supplied-air respirator with a full facepiece that is operated in a pressure-demand or other positive-pressure mode.

Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode.

#### **For Unknown Concentrations or Immediately Dangerous to Life or Health -**

Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply.

Any self-contained breathing apparatus with a full facepiece.

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## SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

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**PHYSICAL STATE:** gas

**COLOR:** colorless

**ODOR:** sweet odor

**MOLECULAR WEIGHT:** 26.04

**MOLECULAR FORMULA:** H-C-C-H

**BOILING POINT:** Not available

**FREEZING POINT:** Not available

**SUBLIMATION POINT:** -119 F (-84 C)  
**VAPOR PRESSURE:** 760 mmHg @ -84 C  
**VAPOR DENSITY (air=1):** 0.90  
**SPECIFIC GRAVITY:** Not applicable  
**DENSITY:** 1.1747 g/L @ 0 C  
**WATER SOLUBILITY:** 0.94% @ 25 C  
**PH:** Not applicable  
**VOLATILITY:** Not applicable  
**ODOR THRESHOLD:** Not available  
**EVAPORATION RATE:** Not applicable  
**VISCOSITY:** 0.010 cP @ 20 C  
**COEFFICIENT OF WATER/OIL DISTRIBUTION:** Not applicable  
**SOLVENT SOLUBILITY:**  
**Soluble:** acetone, benzene, chloroform, ether

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## SECTION 10 STABILITY AND REACTIVITY

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**REACTIVITY:** May decompose violently on heating. May explode when heated.

**CONDITIONS TO AVOID:** Avoid heat, flames, sparks and other sources of ignition. Containers may rupture or explode if exposed to heat.

**INCOMPATIBILITIES:** metals, halogens, oxidizing materials, metal carbide, reducing agents, halo carbons

**HAZARDOUS DECOMPOSITION:**  
Thermal decomposition products: oxides of carbon

**POLYMERIZATION:** Polymerizes with evolution of heat. Avoid contact with curing agents, accelerators, and/or initiators.

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## SECTION 11 TOXICOLOGICAL INFORMATION

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**ACETYLENE:**  
**ACUTE TOXICITY LEVEL:** Insufficient Data.  
**TARGET ORGANS:** central nervous system  
**ADDITIONAL DATA:** Stimulants such as epinephrine may induce ventricular fibrillation.

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## SECTION 12 ECOLOGICAL INFORMATION

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Not available

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## SECTION 13 DISPOSAL CONSIDERATIONS

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Dispose in accordance with all applicable regulations.

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## SECTION 14 TRANSPORT INFORMATION

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**U.S. DOT 49 CFR 172.101:**

**PROPER SHIPPING NAME:** Acetylene, dissolved

**ID NUMBER:** UN1001

**HAZARD CLASS OR DIVISION:** 2.1

**LABELING REQUIREMENTS:** 2.1



**CANADIAN TRANSPORTATION OF DANGEROUS GOODS:**

**SHIPPING NAME:** Acetylene, dissolved

**ID NUMBER:** UN1001

**CLASSIFICATION:** 2.1

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## SECTION 15 REGULATORY INFORMATION

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**U.S. REGULATIONS:**

**CERCLA SECTIONS 102a/103 HAZARDOUS SUBSTANCES (40 CFR 302.4):** Not regulated.

**SARA TITLE III SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355.30):**  
Not regulated.

**SARA TITLE III SECTION 304 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355.40):**  
Not regulated.

**SARA TITLE III SARA SECTIONS 311/312 HAZARDOUS CATEGORIES (40 CFR 370.21):**

ACUTE: Yes

CHRONIC: No

FIRE: Yes

REACTIVE: Yes

SUDDEN RELEASE: Yes

**SARA TITLE III SECTION 313 (40 CFR 372.65):** Not regulated.

**OSHA PROCESS SAFETY (29CFR1910.119):** Not regulated.

**STATE REGULATIONS:**

**California Proposition 65:** Not regulated.

**CANADIAN REGULATIONS:**

**WHMIS CLASSIFICATION:** ABF

**NATIONAL INVENTORY STATUS:**

**U.S. INVENTORY (TSCA):** Listed on inventory.

**TSCA 12(b) EXPORT NOTIFICATION:** Not listed.

**CANADA INVENTORY (DSL):** Not determined.

**CANADA INVENTORY (NDSL):** Not determined.

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SECTION 16 OTHER INFORMATION

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MSDS SUMMARY OF CHANGES

SECTION 14 TRANSPORT INFORMATION

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